



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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Dec 27
3215 fute

647.7304
Job Sheet 187038



Part No: 647.7304

Job Qty: 1 ea

Part Name: EC135 T2/P2 Cable Cutters System



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/26/18

Job Tracking No:

Due Date: 1/9/19

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: 647.7300 REV.D IPP REV:A 16.04.27 NEW ISSUE DD VERF:JLM IPP REV:B 16.11.15 dwg rev.c DD
VERF:JLM IPP REV:C 17.12.07 AS PER DWG REV.D DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier			
90	Start up Operation	1 Ea	1/9/19	1/9/19	0.00	0.00	Start Up Stores/Pkg-1			DEC 06 2018
110	Packaging	1 pcs	1/9/19	1/9/19	0.00	0.00	Packaging1-1			DEC 06 2018
120	QC	1 pcs	1/9/19	1/9/19	0.00	0.00	QC4			DEC 10 2018
130	Packaging	1 pcs	1/9/19	1/9/19	0.00	0.00	Packaging3-1			DEC 10 2018
135	DC	1 pcs	1/9/19	1/9/19	0.00	0.00	DC			DEC 10 2018
140	QC21-FG	1 Ea	1/9/19	1/9/19	0.00	0.00	QC21			DEC 10 2018

Part Op 130 - Identify and pack for shipping as per PPP 647.7304
Descriptions: 135 - Photocopy bluefile & type labels per PPP 647.7304

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
2600-LW	Washer, Camlock Retaining	2 Ea (2 ea)	90-Start up Operation	5134690
26R16-1	Camloc Receptacle	2 Ea (2 ea)	90-Start up Operation	5041065
26S8-11	Camloc Stud	2 Ea (2 ea)	90-Start up Operation	5098207
647.7501 1001	Lower Cutter Assembly	1 Ea (1 ea)	90-Start up Operation	5129022
647.1601 5001	Wiper Deflector Aft	1 Ea (1 ea)	90-Start up Operation	5122726
647.1610 21	Wiper Deflector Fwd	1 Ea (1 ea)	90-Start up Operation	5049889
MS21042L08	Nut	10 Ea (10 ea)	90-Start up Operation	5100409
647.1913 43	Tee	1 Ea (1 ea)	90-Start up Operation	5100035
647.1915 43	Support Angle	1 Ea (1 ea)	90-Start up Operation	5100793
647.1814 108	Gusset LH A	1 Ea (1 ea)	90-Start up Operation	5020912
647.1815 108	Gusset RH	1 Ea (1 ea)	90-Start up Operation	7M130388-26
647.7702 76	Strut Assembly	2 Ea (2 ea)	90-Start up Operation	511876
647.7701 114	Strut Assembly	2 Ea (2 ea)	90-Start up Operation	5127768
647.1818 110	Nose Door Spacer	1 Ea (1 ea)	90-Start up Operation	M130388-17
647.1810 108	Nose Door Doubler	1 Ea (1 ea)	90-Start up Operation	7M130388-22
647.0112 106	Strut Bracket	4 Ea (4 ea)	90-Start up Operation	5097197
647.7910	Angle Bracket	2 Ea (2 ea)	90-Start up Operation	5026032
647.7911	Bracket	2 Ea (2 ea)	90-Start up Operation	5101179
647.7912	Clip	4 Ea (4 ea)	90-Start up Operation	5041965
647.7913	Doubler	2 Ea (2 ea)	90-Start up Operation	5026968
647.7914 114	Bracket	1 Ea (1 ea)	90-Start up Operation	5026897
647.7915 115	Bracket	1 Ea (1 ea)	90-Start up Operation	5026904

DQA: _____ Date: _____



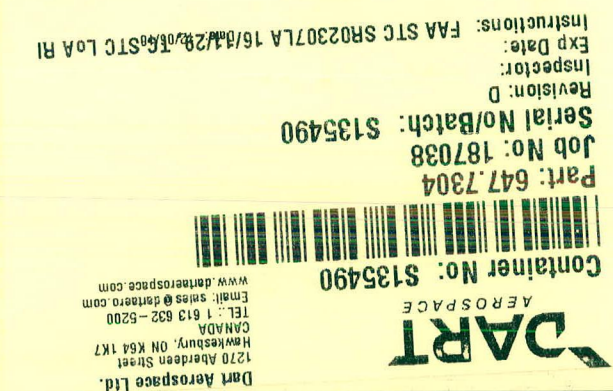
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION		AGAINST DEPARTMENT/PROCESS							
	Rework	☐	Skid-tube	☐	Cross tube	☐	Water Jet	☐	Engineering	☐
	Scrap	☐	Machining	☐	Small Fab	☐	Prod. Eng. Coord.	☐	Quality	☐
	Use-as-is	☐	Thermoforming	☐	Finishing	☐	Rec/Store/Packaging	☐	Other	☐
	Suspected Unapproved	☐	Large Fab	☐	Composite	☐	Supplier	☐		

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval
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Description Work Order Deviation		Completed By
		Lead hand / Supervisor Approval Verification
		QC / QA Coordinator Approval

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐								
Misidentified	☐	Past Due	☐	OTHER :							

JOS 187038

006874

647.7916	Bracket	2 Ea (2 ea)	90-Start up Operation
647.7917	Bracket	1 Ea (1 ea)	90-Start up Operation
647.7918	Bracket	1 Ea (1 ea)	90-Start up Operation
647.7819	Cross Bracket Fwd	1 Ea (1 ea)	90-Start up Operation
647.7821	Eye Bolt Fitting LH	1 Ea (1 ea)	90-Start up Operation
647.7822	Eye Bolt Fitting RH	1 Ea (1 ea)	90-Start up Operation
647.1914	Bracket	1 Ea (1 ea)	90-Start up Operation
647.1602	Doubler Assembly	1 Ea (1 ea)	90-Start up Operation
647.1811	Spacer	2 Ea (2 ea)	90-Start up Operation
647.1812	Shim	13 Ea (13 ea)	90-Start up Operation
601.3011	P-Seal	1.4000 ft (1.4 ea)	90-Start up Operation
647.3201	Grounding Cable Assembly	1 Ea (1 ea)	90-Start up Operation
MS21266-2N	Grommet	1 Ea (1 ea)	90-Start up Operation
AN44-12A	Eyebolt	2 Ea (2 ea)	90-Start up Operation
AN665-34R	Clevis	4 Ea (4 ea)	90-Start up Operation
MS21047-3	Nut Plate	12 Ea (12 ea)	90-Start up Operation
AN3-4A	Bolt	2 Ea (2 ea)	90-Start up Operation
AN3-11A	Bolt	4 Ea (4 ea)	90-Start up Operation
AN4CH6A	Bolt	1 Ea (1 ea)	90-Start up Operation
AN4C7A	Bolt	4 Ea (4 ea)	90-Start up Operation
NAS6603-12	Bolt	4 Ea (4 ea)	90-Start up Operation
NAS6603-16	Bolt	4 Ea (4 ea)	90-Start up Operation
MS21042L3	Nut	35 Ea (35 ea)	90-Start up Operation
MS21042L4	Nut	4 Ea (4 ea)	90-Start up Operation
AN316C4R	Nut, Jam	4 Ea (4 ea)	90-Start up Operation
647.8510	Insert	20 Ea (20 ea)	90-Start up Operation
647.8511	Insert	4 Ea (4 ea)	90-Start up Operation
647.8512	Insert	2 Ea (2 ea)	90-Start up Operation
MS21042L5	Nut	4 Ea (4 ea)	90-Start up Operation
MS27039-08-07	Screw	1 Ea (1 ea)	90-Start up Operation
MS27039-08-13	Screw	4 Ea (4 ea)	90-Start up Operation
MS27039-1-07	Screw	3 Ea (3 ea)	90-Start up Operation
MS27039-1-09	Screw	12 Ea (12 ea)	90-Start up Operation
MS27039-1-10	Screw	6 Ea (6 ea)	90-Start up Operation
MS27039-1-12	Screw	2 Ea (2 ea)	90-Start up Operation
MS27039-1-14	Screw	4 Ea (4 ea)	90-Start up Operation
MS27039-1-15	Screw	1 Ea (1 ea)	90-Start up Operation
MS27039-1-16	Screw	4 Ea (4 ea)	90-Start up Operation
MS27039-1-17	Screw (601.1954)	2 Ea (2 ea)	90-Start up Operation
MS24694-S54	Screw	5 Ea (5 ea)	90-Start up Operation
601.2999	Screw	3 pcs (3 ea)	90-Start up Operation
CCR264SS-3-03	Cherry Rivet	24 Ea (24 ea)	90-Start up Operation
CCR274SS-3-03	Rivet	4 Ea (4 ea)	90-Start up Operation
CR3213-4-2	Cherry Rivet	4 Ea (4 ea)	90-Start up Operation
CR3213-4-3	Rivet, Cherry	24 Ea (24 ea)	90-Start up Operation
CR3213-4-4	Rivet, Cherry	16 Ea (16 ea)	90-Start up Operation
CR3213-4-5	Rivet	8 Ea (8 ea)	90-Start up Operation
CR3213-4-6	Rivet	17 Ea (17 ea)	90-Start up Operation
CR3213-5-3	Cherry Rivet	16 Ea (16 ea)	90-Start up Operation
CR3213-5-4	Cherry Rivet	12 Ea (12 ea)	90-Start up Operation
CR3522-4-3	Rivet	8 Ea (8 ea)	90-Start up Operation
CR3522-5-3	Rivet	8 Ea (8 ea)	90-Start up Operation
CR3212-5-6	Cherry Rivet	2 Ea (2 ea)	90-Start up Operation
NAS1149FN832P	Washer	25 Ea (25 ea)	90-Start up Operation
NAS1149F0332P	Washer	89 Ea (89 ea)	90-Start up Operation
NAS1149C0432R	Washer	12 Ea (12 ea)	90-Start up Operation
NAS1149F0532P	Washer	4 Ea (4 ea)	90-Start up Operation
601.2375	Washer 90965A160	3 Ea (3 ea)	90-Start up Operation
600.1012	Sealant PR1425B2 (#654 sem)	1 pcs (1 ea)	90-Start up Operation
601.2045	RTV (LOCTITE 598)	1 Ea (1 ea)	90-Start up Operation
600.0991	Magnabond 6398 Part B Size 112 ml	1 Ea (1 ea)	90-Start up Operation
600.0990	Magnabond 6398 Part A Size 112 ml	1 Ea (1 ea)	90-Start up Operation

5026966.
 3084931.
 F119030.
 5028020
 5034480-1
 5035905.
 5101859
 FM130388-21
 FM130388-23
 FM130388-19
 5006166.
 5098016.
 F123900
 5131204
 5131214.
 5103943
 5112901.
 5098034
 FM126176.
 5095478
 5007044.
 5131202.
 5094592
 5109736.
 5130135
 5114681
 5119696.
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 5016508
 5111086.
 5084887
 5124662.
 5124664.
 F120449-40
 5112435
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 FM127831-4.
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 5049458
 5099729.
 F123785-0-
 5116951
 5089219
 5027749.
 FM138414-40
 5019369.
 508575.
 5066948
 5117367.
 5080638
 5084867
 5107796.
 5131201
 5103990
 F18052-4.
 F162289.
 5132228.
 5032768

Exp 5/19

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																					
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Job 187038

647.7823	Cross Bracket Aft	1 Ea (1 ea)	90-Start up Operation
647.2114	Upper U Channel	1 Ea (1 ea)	90-Start up Operation
647.1404	Upper Cutter Assembly	1 Ea (1 ea)	90-Start up Operation
MS27039-08-19	Screw	5 Ea (5 ea)	90-Start up Operation
CR3523-4-3	Rivet	4 Ea (4 ea)	90-Start up Operation
CR3523-4-4	Rivet	24 Ea (24 ea)	90-Start up Operation
CR3523-5-3	Rivet	8 Ea (8 ea)	90-Start up Operation
647.1702	Skid Deflector Assembly	2 Ea (2 ea)	90-Start up Operation
LN9025-0820K	Lock Tab Washer	8 Ea (8 ea)	90-Start up Operation
LN9037-08018	Screw	8 pcs (8 ea)	90-Start up Operation
93635A212	Bolt	4 Ea (4 ea)	90-Start up Operation
MS27039-1-18	Screw	2 Ea (2 ea)	90-Start up Operation
601.3902	Eye Bolt	2 Ea (2 ea)	90-Start up Operation

508182.
5045154.
5125372.
5104359.
FM129764.
508482220 50.5875534.
5049827.
5001801.
5094434.
5042038.
5021920.
7124326.
5026005.

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	2600-LW	2	102	0
	26R16-1	2	48	0
	26S8-11	2	60	0
	600.0990	1	4	0
	600.0991	1	3	0
	600.1012	1	21	0
	601.2045	1	19	0
	601.2375	3	84	0
	601.2999	3	37	0
	601.3011	1	135	0
	601.3902	2	43	0
	647.0112	4	52	0
	647.1404	1	7	0
	647.1601	1	21	0
	647.1602	1	7	0
	647.1610	1	47	0
	647.1702	2	6	0
	647.1810	1	43	0
	647.1811	2	62	0
	647.1812	13	122	0
	647.1814	1	46	0
	647.1815	1	34	0
	647.1818	1	55	0
	647.1913	1	46	0
	647.1914	1	40	0
	647.1915	1	40	0
	647.2114	1	15	0
	647.3201	1	7	0
	647.7501	1	5	0
	647.7701	2	6	0
	647.7702	2	13	0
	647.7819	1	6	0
	647.7821	1	17	0
	647.7822	1	13	0
	647.7823	1	44	0
	647.7910	2	63	0
	647.7911	2	53	0
	647.7912	4	161	0
	647.7913	2	6	0
	647.7914	1	41	0
	647.7915	1	39	0
	647.7916	2	58	0
	647.7917	1	47	0
	647.7918	1	32	0
	647.8510	20	135	0
	647.8511	4	82	0
	647.8512	2	47	0
	93635A212	4	28	0
	AN3-11A	4	275	0
	AN3-4A	2	300	0
	AN316C4R	4	44	0
	AN44-12A	2	10	0
	AN4C7A	4	125	0
	AN4CH6A	1	11	0

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								

AN665-34R	4	56	0
CCR264SS-3-03	24	502	0
CCR274SS-3-03	4	14	0
CR3212-5-6	2	89	0
CR3213-4-2	4	112	0
CR3213-4-3	24	204	0
CR3213-4-4	16	518	0
CR3213-4-5	8	118	0
CR3213-4-6	17	51	0
CR3213-5-3	16	302	0
CR3213-5-4	12	125	0
CR3522-4-3	8	192	0
CR3522-5-3	8	88	0
CR3523-4-3	4	11	0
CR3523-4-4	24	63	0
CR3523-5-3	8	63	0
LN9025-0820K	8	45	0
LN9037-08018	8	137	0
MS21042L08	10	1,111	0
MS21042L3	35	2,239	0
MS21042L4	4	2,270	0
MS21042L5	4	401	0
MS21047-3	12	382	0
MS21266-2N	1	36	0
MS24694-S54	5	390	0
MS27039-08-07	1	258	0
MS27039-08-13	4	552	0
MS27039-08-19	5	1,219	0
MS27039-1-07	3	197	0
MS27039-1-09	12	66	0
MS27039-1-10	6	241	0
MS27039-1-12	2	214	0
MS27039-1-14	4	375	0
MS27039-1-15	1	345	0
MS27039-1-16	4	449	0
MS27039-1-17	2	59	0
MS27039-1-18	2	1,218	0
NAS1149C0432R	12	1,810	0
NAS1149F0332P	89	2,007	0
NAS1149F0532P	4	1,127	0
NAS1149FN832P	25	1,453	0
NAS6603-12	4	59	0
NAS6603-16	4	24	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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REFERENCE ONLY

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NOTES: UNLESS OTHERWISE SPECIFIED

- AFTER INSTALLATION, APPLY F/N 90 A/R TO FILL GAPS AND FILLET EDGES.

- 2 APPLY F/N 91 TO FAYING SURFACES.

- 3 DELETED.

- 4 MATCH DRILL HOLES THROUGH F/N 26 or F/N 98 AND FUSELAGE.

- 5 SHIM GAP BETWEEN F/N 1 & 26 AS NEEDED.

- 6** AT CUSTOMERS OPTION, INSTALL F/N 96 BY MATCH DRILLING ONTO F/N 1 FOR KIT P/N 647.7301 or F/N 99 FOR KIT P/N 647.7304.

- 7 647.7301 INSTALLATION FOR EC135.

- 8 647.7304 INSTALLATION FOR EC135 T2/P2.

- 9 EXCEPT WHERE NOTED, INSTALLATION FOR 647.7304 AND 647.7307
SAME AS 647.7301.

- 10 CUT LENGTH: 16 INCHES.

- 11** INSTALLATION FOR 647.7307 AND 647.7304 ARE IDENTICAL EXCEPT 647.1405 (F/N 111) REPLACES 647.1404 (F/N 99).

- 12 DETAIL W REFLECTS THE UNIQUE 647.1405 ASSEMBLY (F/N 111) USED ON 647.7307 THAT REPLACES 647.1404 (F/N 99) ON 647.7304.

- 13** ADDITIONAL KITS FOR SUB-ASSEMBLIES OF THE 647.7301, 647.7304, AND 647.7307 ASSEMBLIES ARE DEFINED BY MPP-195

[illegible]

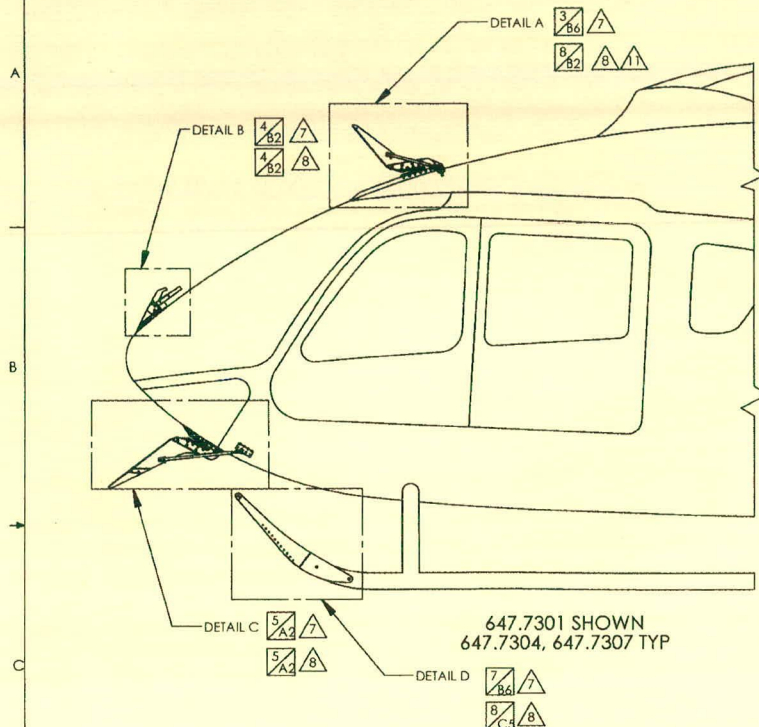
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REFERENCE ONLY

1			111	647.1405	CUTTER ASSY (UPPER)		
2	2		110	601.3902	EYE BOLT		
2	2		109	601.2910	SCREW	MS27039-1-18	
4	4		108	601.3963	BOLT	93635A212	
8	8		107	601.3654	BOLT	LN9037-08018	
8	8		106	601.3655	LOCK WASHER	LN9025-0820K	
2	2		105	647.1702	SKID DEFLECTOR ASSY		
8	8	8	104	601.3214	CHERRY RIVET	CR3522-5-3	
12	24	24	103	601.3213	CHERRY RIVET	CR3522-4-4	
2	4	4	102	601.3212	CHERRY RIVET	CR3522-4-3	
5	5		101	601.1541	LOCKNUT	M121042108	
5	5		100	601.2765	SCREW	MS27039-0819	
	1		99	647.1404	CUTTER ASSY (UPPER)		
1	1		98	647.2114	UPPER U CHANNEL		
1	1		97	647.7823	CROSS BRACKET AFT		
1	1	1	96	647.5701	GPS MOUNT KIT		6
		8	95	601.1097	WASHER	NAS114990463P	
		1	94	647.7919	SHIM		
A/R	A/R	A/R	93	600.0990	MAGNOBOND 6398 PART A		
A/R	A/R	A/R	92	600.0991	MAGNOBOND 6398 PART B		
A/R	A/R	A/R	91	601.2045	RTV	LOCIRE 576	
A/R	A/R	A/R	90	600.1012	SEALANT	PR-1425 CLASS 6	
3	3	3	89	601.2375	WASHER		
7307	7304	7301	FIND #	PART #	DESCRIPTION	MAT'L	SPEC

ORIGINAL DATE
11/24/09
DRAWN BY
A. QUINN
CHECKED
D. BARKER
DRAWING APPROVAL
P. BRAVO
DATE
01/13/10
CONTRACT NO.

DART
AEROSPACE
APICAL INDUSTRIES, INC.
DBA DART AEROSPACE
3030 ENTERPRISE CT.,
SUITE A
VISTA, CA. 92081
(760)-724-5300

EC135 CABLE CUTTERS KIT

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

SHEET 2 OF 8
DWG. NO. 647.7300
SCALE NONE

1

RECEIVED

RECEIVED